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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SONG, HOON K	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/071,993	FENKART ET AL.	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44-48 and 50-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-48 and 50-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 63-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Bailey et al. (US 5982843).

Regarding claim 63, Bailey teaches a method of operating an x-ray technique-based non-intrusive inspection apparatus (8) which includes:

operating an x-ray source (122) to radiate confines of tunneling (106); and

operating a fan (140) to control a ratio of air flowing into and out of a housing (cavity) defined externally of the tunneling (106) and internally of paneling (102) around the tunneling (106), so that air in the housing is pressurized (column 5 line 38+).

Regarding claim 64, Bailey teaches that the air is re-circulated by the fan after pressurizing the housing (figure 3 and 4).

Regarding claim 65, Bailey teaches rotating a CT scanner subsystem (120), the x-ray source forming part of the CT scanner subsystem and rotating therewith (figure 2a).

Regarding claim 66, Bailey teaches that directing the air through the CT scanner subsystem and through a radiator (146) of the CT scanner subsystem (figure 3 and 4).

Regarding claim 67, Bailey teaches that conveying (104) an object on a belt through the CT scanner subsystem (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 45-48 and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deucher et al. (US 5610968) in view of Bailey et al. (US 5982843).

Regarding claim 45, Deucher teaches an apparatus which includes:

A support frame (figure 1);

CT scanner subsystem (C) rotatably mounted to the frame, the CT scanner subsystem having a gantry defining at least one air passage (air passage, figure 4 below), and a radiator (48) mounted to the gantry;

a plenum (A, figure 4 below) which is mounted to the frame so that the gantry rotate relative to the plenum, the plenum and the gantry jointly defining a confined volume (a space between A and C); and

a fan (58), wherein, when the fan is operated, air is directed from the fan into the confined volume, from the confined volume into the air passage, and from the air passage through the radiator (figure 4 below).

(Note: since air is blown into a space (A), the space can be constituted as a plenum)

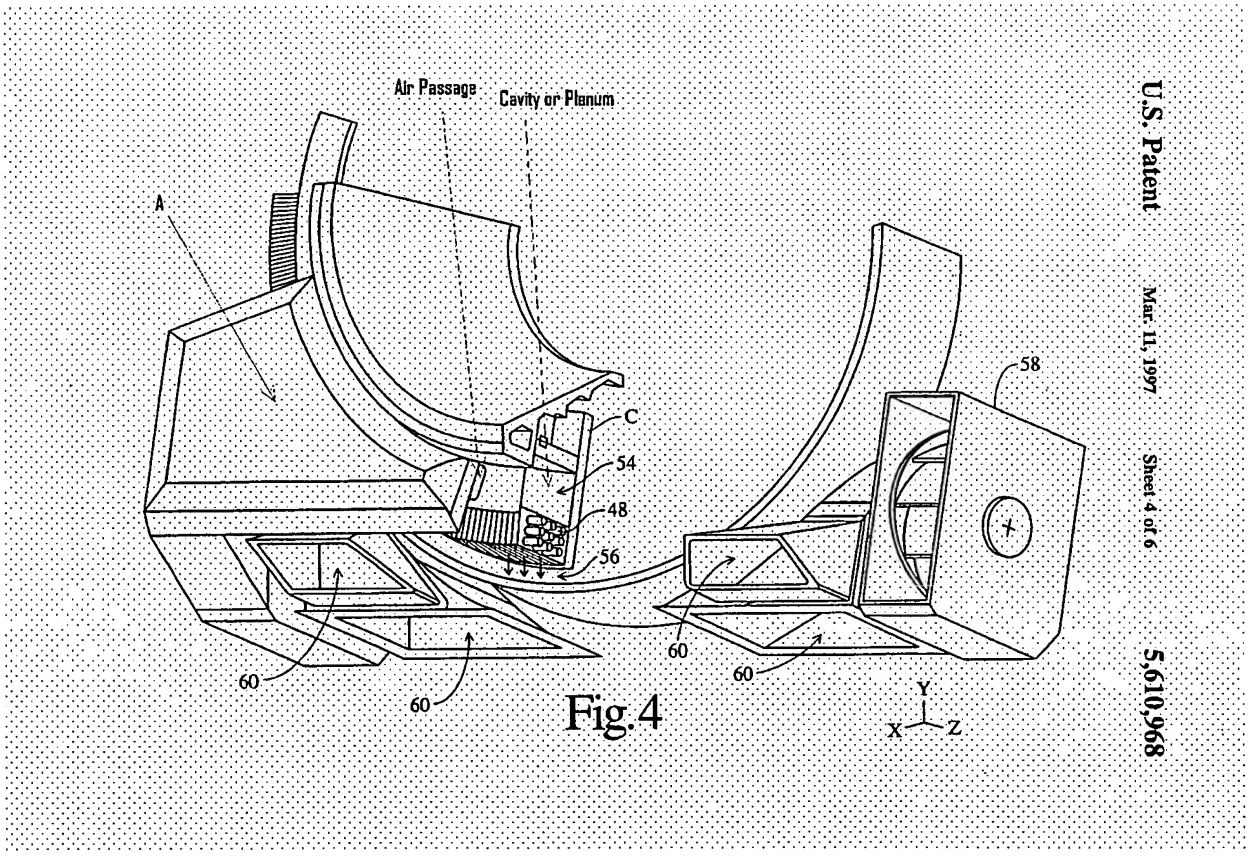

Fig.4

However Deucher fails to teach that the fan controls a ratio of air flow through an air inlet duct and an air return duct so that air in the confined volume is above atomospheric pressure.

Bailey teaches an air conditioning system for a CT scanner which maintains an air pressure inside of CT chamber to be slightly greater than the air pressure outside the chamber (column 5 line 40-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the CT system of Deucher with the air conditioning system as taught by Bailey, since the air conditioning system of Bailey would prevent dust and dirt from entering the chamber (column 5 line 44).

Regarding claim 46, Deucher teaches

A duct which connecting the plenum and outside air, but fails to teach an air-conditioning unit (140).

Bailey teaches an air conditioning unit which is used in an X-ray cooling system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the X-ray apparatus of Deucher with the air-conditioning unit as taught by Bailey, since the air conditioning unit of Bailey would provide the x-ray apparatus of Deucher with more cooled air into a headed space, thus it will cool the system more rapidly.

Regarding claim 47, Deucher teaches that the gantry defines an enclosure, the air being directed from the air passage into the enclosure in the gantry and from the enclosure in the gantry through the radiator (figure 4).

Regarding claim 48, Deucher fails to teach the system is including tunneling mounted to the support frame and having a first end and a second end opposing the first end but fails to teach a paneling located around the tunneling and the CT scanner subsystem so that the paneling and the support frame jointly defines a housing around the tunneling and the CT scanner subsystem, the housing having a entry aperture in proximity to the first end and an exit aperture in proximity to the second end of the tunneling and having an air inlet opening wherein the fan is positioned to draw air through the air inlet opening, into the housing, the housing, being formed, the entry aperture sealing with the second end of the tunneling to an extent sufficient so that the confines of the housing are at higher pressure than externally of the housing when the fan draws air into the housing.

Bailey teaches a tunneling (106) mounted to the support frame and having a first end and a second end opposing the first end and paneling (102) located around the tunneling and the CT scanner subsystem (120) so that the paneling and the support frame jointly defines a housing around the tunneling and the CT scanner subsystem, the housing having a entry aperture (see where aperture under the front entry) in proximity to the first end and an exit aperture in proximity to the second end of the tunneling and having an air inlet opening (162) wherein the fan is positioned to draw air through the air inlet opening, into the housing, the housing, being formed, the entry aperture sealing

(see the aperture cover) with the second end of the tunneling to an extent sufficient so that the confines of the housing are at higher pressure than externally of the housing when the fan draws air into the housing (column 5 line 43+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an x-ray apparatus of Deucher with the paneling and housing structure as taught by Bailey, since the apparatus structure of Bailey would provide the x-ray apparatus of Deucher with dust free environment (column 5 line 43+).

Regarding claim 60, Bailey teaches paneling (102) around the CT scanner subsystem.

Regarding claim 61, Bailey teaches the air enters a housing defined within the paneling after flowing through the radiator (figure 4).

Regarding claim 62, Bailey teaches that the housing is defined between the CT scanner subsystem and the paneling (figure 4).

Claims 44 and 50-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US 5982843) in view of Deucher et al. (US 5610968).

Regarding claim 44, Bailey teaches an x-ray technique based non-intrusive inspection apparatus which includes:

A base frame (110, 114);

Tunneling (106) mounted to the based frame and having a first end and a second end opposing the first end;

An x-ray source (122) which when operated creates radiation within the tunneling;

Paneling (102) located around the tunneling and the x-ray source so that the paneling and the base frame jointly define a housing (inside of the paneling) around the tunneling and the x-ray source, the housing having entry aperture (see where a vent under the tunneling in figure 1) in proximity to the first end and exit aperture (see where a vent on side of the paneling in figure 1) proximity to the second end of the tunneling (106), and having an air inlet opening (142) and an air outlet opening (114); and

A fan (140) positioned to control a ratio of air flow so that the confines of the housing are at higher than externally of the housing when the fan air into the housing (column 5 line 42+).

However Bailey fails to teach the fan is flowing air from an air inlet duct in flow communication with the air inlet opening and an air return duct in flow communication with the air output opening

Deucher teaches an open air circulating system which drawing air into a housing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a x-ray system of Bailey with the open air circulating system as taught by Deucher, since the open air circulating system is cheaper so that it would reduce manufacturing cost.

Regarding claim 50, Bailey teaches

a support structure (vertical extending pole, figure 1) having a lower end secured to the base frame (110) and extending upward therefrom; and

a CT scanner subsystem (120) rotatably mounted to the support structure, the x-ray source forming part of the CT scanner subsystem and rotating therewith, the housing being externally of the CT scanner subsystem (figure 2a).

Regarding claim 51, Bailey fails to the structure of the CT scanner subsystem.

Deucher teaches the a CT scanner subsystem has a gantry defining at least one air passage and a radiator mounted to the gantry further comprising a plenum, the gantry rotating relative to the plenum, the plenum and the gantry jointly defining a confined volume, wherein, when fan is operated, air is directed from the fan into the confined volume, from the confined volume into the air passage, and from the air passage through the radiator.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an X-ray apparatus of Bailey with the gantry structure as taught by Deucher, since the gantry structure of Deucher would effectively cool the rotating gantry with space saving structure (column 2 line 12+).

Regarding claim 52, Bailey teaches that the air pressurizes the housing after flowing through the radiator (column 5 line 42+).

Regarding claim 53, Bailey teaches an air-conditioning unit (140); and

a duct connecting the air-conditioning unit with the plenum (150) so that air is directed from the air-conditioning unit through the duct into the confined volume (see where vent, 142 is directed to).

Regarding claim 54, Bailey teaches that the air flows (162) through the fan before flowing through the housing (figure 3).

Regarding claim 55, Bailey teaches that the air is re-circulated by the fan after pressurizing the housing (figure 4).

Regarding claim 56, Bailey teaches that the fan is located externally of the housing (figure 4).

Regarding claim 57, a conveyor system having at least one belt, at least partially located in the tunneling, which, upon movement, is capable of transporting an object through at least a portion of the tunneling.

Regarding claim 58, Bailey teaches

a support structure (A) having a lower end secured to the base frame and extending upward therefrom; and

a CT scanner subsystem rotatably mounted to the support structure, the x-ray source forming part of the CT scanner subsystem and rotating therewith, the housing being externally of the CT scanner subsystem and the belt transporting the object through the CT scanner subsystem (figure 1and 1a).

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey as modified by Deucher as applied to claim 58 above, and further in view of Peschmann (US 5182764).

Regarding claim 59, Bailey as modified by Deucher fails teaches an x-ray line scanner subsystem radiating the object prior to being radiated by the CT scanner subsystem.

Peschmann teaches the line scanner (figure 1).

In view of Peschmann, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to adapt the line scanner in order to determine exact position of the object on the conveyor (column 4 line 5+). Accordingly, one would be motivated to adapt the line scanner because it would save time by eliminating the necessity of CT scanning the entire object (column 4 line 18+).

Response to Arguments

Applicant's arguments filed May 12, 2004 have been fully considered but they are not persuasive.

The applicant argues that none of the prior art teaches "a fan to control a ratio of airflow as recited in claims 44, 50-57, 58, and 63-67".

However Bailey reference teaches an air conditioning system maintains an air pressure inside a chamber to be slightly greater a positive pressure inside the chamber relative to the outside air (column 5 line 40-44). Thus the applicant's fan is read on Bailey's air conditioning system and the applicant's argument is not persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAVID V. BRUCE
PRIMARY EXAMINER

HKS 8/17/04
HKS